



ENERGY AND ENVIRONMENT CABINET

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Leonard K. Peters
Secretary

June 17, 2014

Ms. Jennifer Woodard
US Department of Energy
Portsmouth/Paducah Project Site Office
PO Box 1410
Paducah, Kentucky 42002

RE: Conditional Concurrence to the Remedial Action Work Plan for In Situ Source Treatment by Deep Soil Mixing of the Southwest Groundwater Plume Volatile Organic Source at the C-747 Oil Landfarm (SWMU 1) (DOE/LX/07-1287&D2/A1)
Paducah Gaseous Diffusion Plant
Paducah, McCracken County, Kentucky
KY8-890-008-982

Ms. Woodard:

On May 20, 2014 the Kentucky Division of Waste Management (Division) received the D2/A1 Addendum to the *Remedial Action Work Plan for In Situ Source Treatment by Deep Soil Mixing of the Southwest Groundwater Plume Volatile Organic Source at the C-747-C Oil Landfarm (SWMU 1)*. The Division and EPA shared concerns regarding the above-mentioned document with the Department of Energy (DOE) via conference calls on June 4th and 5th, 2014. At that time, DOE appeared to understand and be receptive to the stated concerns. On June 10th, DOE requested in an e-mail that the Division and EPA formally submit any comments to the D2/A1 document so they could be addressed. Therefore, in the interest of insuring that the document fully reflects discussions held between the parties on June 4th and 5th, 2014, the Division is hereby issuing a letter of conditional concurrence. The Division's conditions for final approval of the Addendum are attached.

If you have any questions or require additional information, please contact Brian Begley of my staff at (502) 564-6716, or e-mail at brian.begley@ky.gov.

Sincerely,



April J. Webb, P.E., Manager
Hazardous Waste Branch

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DWM File: #1160-E, Graybar ARM20140009 (SW Plume VOC Sources RAWP Add)

**Kentucky Division of Waste Management Conditions to the
Remedial Action Work Plan Addendum for In Situ Treatment by Deep Soil Mixing of the
Southwest Groundwater Plume Volatile Organic Source at the C-747-C Oil Landfarm,
(SWMU 1)**

DOE/LX/07-1287&D2/A1

May 17, 2014

General Statement:

The Division's conditions (outlined below) seek to modify this RAWP Addendum by replacing outdated or incomplete information with information discussed by the parties during conference calls held on June 4th and 5th, 2014. Several sequencing, staging, and spatial aspects of the remedial activities have changed since the Division formally granted approval of the RAWP on January 8, 2014. These changes have neither been reflected in the public record nor have they been officially approved by Kentucky or the EPA. In addition, the Addendum (as submitted) leaves a gap in the administrative record regarding the purpose and timing of the additional characterization work to be performed and is silent as to any subsequent actions that may be required once results are obtained.

Specific Conditions:

1. Page C-3, Introduction (Documentation):

The document states, "This Addendum documents information developed by the Federal Facility Agreement (FFA) parties for the purposes of implementing additional investigation activities and closing the uncertainties described in the 2013 Remedial Design Report (RDR)..." The Addendum does not document all information developed by the FFA parties for the purposes of implementing additional investigation activities. In addition, implementation will not completely eliminate the uncertainties described in the 2013 RDR. This Addendum specifies the locations of four (4) planned soil borings, the approach to be used when sampling soil from the borings, and the five decision rules developed by the FFA parties to be used when evaluating the results. However, the Addendum does not fully document why additional sampling is needed to reduce uncertainty in that it fails to accurately document the lines of evidence that support the need for additional sampling. The following key information is missing and should be included or discussed in the revised Addendum:

- (1) The east-oriented color photograph (undated) that was shared with the Division and likely depicts the "images/shadows on air photographs" of >100 drums and two-linear trenches filled with an aqueous substance;
- (2) The Addendum should mention that no aerial photograph(s) dating between 1973 and 1979 (the operational time period of the oil landfarm) has been discovered

depicting any historical land disturbance within the area where Deep Soil Mixing will occur but that historical activities and/or land disturbances are visible on photos in the eastern part of the SWMU where three of the four additional borings are proposed;

(3) The Addendum should note that soils containing dioxin were removed (WAG 23) from an area located east of the area where oil land farming activities were believed to have taken place. Another area to the east known as Soils OU grid 001-028 contains soils known to exceed the Industrial Worker Action Level for PCBs. This area should be referenced in the Addendum.

2. Page C-3 (Uncertainty language):

The word ‘uncertainty’ is used in three separate sentences on page C-3 of the Addendum. In two of the sentences ‘uncertainty’ is described as being “closed” and “satisfied” but another sentence more correctly refers to the Addendum as helping to reduce uncertainty. It is a rare occurrence when uncertainty can be completely eliminated. In this instance and in the interest of consistency, the Division believes it is more appropriate to refer to “reduced” rather than “closed” uncertainty. It is unlikely that four additional sample borings will close and/or satisfy all remaining uncertainty regarding SWMU 1 soil contamination, especially since the landfarm plot locations and operational activities at the time are not well understood. Remove any references in this section to uncertainty being “closed” or “satisfied” and instead refer to uncertainty as being “reduced.”

3. Page C-5, Number 6 (Standard 30-day turnaround):

The Addendum states that a “... standard 30-day turnaround...” is proposed for receiving analytical results back from an existing DOE Sample Management Office Laboratory. Shouldn’t an expedited turnaround time be sought from the laboratory so that the FFA parties can “reconvene to discuss the results and path forward?” DOE has stated in more than one conference call that significant contamination found in any of the four additional borings will not necessarily trigger an expansion of the SMWU 1 Deep Soil Mixing footprint. The Division could not find language in the Addendum that states this position. The Division and EPA have maintained the position, in the above-referenced conference calls, that expansion of the Deep Soil Mixing footprint should be considered if analytical results associated with the four additional borings indicate that action is warranted. DOE should clearly state its position within the text with regards to its planned course of action should elevated levels of TCE be detected in any of the planned sample borings.

4. Page C-5, Decision Rules (LTM):

The acronym ‘LTM’ is referenced in three of the five decision rules and yet its meaning is not defined in the text or in any of the Acronym pages associated with the RAWP. At a minimum, define the acronym just prior to the first occurrence in Appendix C.

5. Figure C.1 (Update Figure to Reflect Agreed Upon Changes):

This figure does not reflect modifications agreed to by the parties during a PGDP site visit in January of 2014. The figure does not reflect the following:

- (1) LDA borings #257 and #258 were relocated to the southeast perimeter as a safety precaution;
- (2) The northernmost test boring was moved to a spot located along the southwestern border of the mixing area;
- (3) A non-contaminated mixing test area was established as a contingency;
- (4) MW508, MW509 and MW510 were to be abandoned due to their close proximity to planned construction activities.

Since none of these four modifications were mentioned or depicted in previous SWMU 1 related documents, this figure should be modified and text added to the Addendum that captures the changes.

(End of KDWM Conditions)